

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: VAPAM® HL Soil Fumigant

GENERAL USE: Soil Fumigant

PRODUCT DESCRIPTION: Orange to light yellow-green liquid with the possibility of an amine and a sulfur odor.

EPA Registration Number: 5481-468

MSDS No.: 273_2

Current Revision Date: 24 February, 1997

MANUFACTURER:

AMVAC CHEMICAL CORPORATION

4100 E. Washington Blvd.

Los Angeles, CA 90023-4406

213-264-3910

FAX: 213-268-1028

EMERGENCY TELEPHONE NUMBERS:

MANUFACTURER: 213-264-3910

TRANSPORTATION (24 HOURS)

CHEMTREC: 800-424-9300

MEDICAL (24 HOURS)

HIS: 800-228-5635, Ext. 169

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	WT %	CAS No.
Sodium methyldithiocarbamate (VAPAM®, Metam Sodium)	42%	137-42-8
Other ingredients	58%	

Ingredients not precisely identified are proprietary or nonhazardous.
Values are not product specifications.

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)

COMPONENT	HAZARD	OSHA PEL*	ACGIH TLV*
NONE LISTED			

* Exposure Limits 8 hrs. TWA (ppm)

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3. **HAZARDS IDENTIFICATION**

EMERGENCY OVERVIEW:

DANGER! Dilution with water or with acids may generate poisonous gases (MITC or H₂S). Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Harmful if swallowed. Harmful if inhaled. Harmful if absorbed through the skin. Irritating to eyes, nose and throat. Do not get on skin or clothing. Avoid breathing vapor or spray mist. Do not get in eyes.

Toxic to fish. Do not contaminate water bodies.

POTENTIAL HEALTH EFFECTS

ROUTE(S) OF ENTRY: Skin contact, Inhalation, Ingestion, Eye contact

SIGNS OF ACUTE OVEREXPOSURE: Excessive salivation, sweating, fatigue, weakness, nausea, headache, dizziness, eye and respiratory tract irritation.

SIGNS OF CHRONIC OVEREXPOSURE: Same as above, plus conjunctivitis, photophobia, and blurred vision. In addition, laboratory studies have shown that exposure to the active ingredient, followed by ingestion of alcohol, may cause an adverse reaction, including low blood pressure, rapid heart beat, and flushing of the skin. Consumption of alcohol during and after exposure to this product should be avoided.

CARCINOGENICITY: Laboratory studies have shown some developmental and carcinogenic effects in laboratory animals. Exposure monitoring studies conducted during agricultural applications of metam sodium have shown that human exposure is extremely low; therefore, any potential risk to humans from metam sodium exposure is considered minimal. **Care should be exercised and all label instructions should be followed in the handling of VAPAM® Soil Fumigant.**

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Impaired pulmonary function and preexisting eye problems may be aggravated. Preexisting skin diseases may also be aggravated by exposure to the decomposition products.

4. **FIRST AID MEASURES**

EYES: Immediately flush the eyes with copious amounts of clear, cool running water for a minimum of 15 minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eyes and lids with water. Contact a physician immediately. If there will be a delay in getting medical attention, rinse the eyes for at least another 15 minutes.

INHALATION: Remove victim to fresh air. If breathing has ceased, clear the victim's airway and start mouth-to-mouth artificial respiration. If breathing is difficult, give oxygen. Contact a physician immediately.

INGESTION: Immediately dilute the swallowed product by giving large quantities of water, but do not induce vomiting. If vomiting occurs, give fluids again. Have a physician determine if condition of patient will permit induction of vomiting or evacuation of stomach. Never give anything by mouth to an unconscious person. Contact a physician immediately.

SKIN: Immediately flush all affected areas with large amounts of clear water for at least 15 minutes. Remove contaminated clothing. Do not attempt to neutralize with chemical agents. Wash clothing before reuse. If skin irritation develops, contact a physician immediately.

NOTE TO PHYSICIANS: Treat symptomatically. Contact Hazard Information Services (HIS) at 1-800-228-5635, Ext. 169, or a POISON CONTROL Center, for additional information.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

Flash Point: > 200°F (TCC)

Autoignition Temperature: Not available

Flammable Limits:

Lower flammable limit: Not available

Upper flammable limit: Not available

HAZARDOUS COMBUSTION PRODUCTS: This product will release toxic fumes of methylisothiocyanate (MITC) and hydrogen sulfide, as well as nitrogen oxides, when heated to decomposition or diluted with water.

EXTINGUISHING MEDIA: This product is not flammable. Base extinguisher media on surrounding materials. **NOTE:** Dilution with water may cause generation of flammable and toxic fumes. See **Reactivity with Water** information in SECTION 9.

FIRE FIGHTING INSTRUCTIONS: Evacuate nonessential personnel from the area. Wear self-contained breathing apparatus and impervious clothing. Clean all clothing before reuse.

6. ACCIDENTAL RELEASE MEASURES

GENERAL: Use adequate ventilation and air-supplied respirators, as well as impervious clothing and safety goggles. Keep bystanders upwind and away from the spill.

SMALL SPILL: Cover with absorbent (clay, sawdust, straw, kitty litter, etc.), to absorb the liquid. Sweep into an open drum. Clean the area with common powdered household detergent and a stiff brush and just enough water to make a slurry. Absorb and sweep into the same open drum. Rinse with water, absorb, and add to the waste drum. Close the drum and dispose of properly.

LARGE SPILL: Dike the spill to prevent contamination of local water sources. Siphon the majority of the liquid into drums for use or disposal, depending on the circumstances. Clean the area as described for a small spill.

7. HANDLING AND STORAGE

HANDLING: Prevent skin contact. Do not breathe fumes. Wear appropriate personal protective equipment. Wash thoroughly and change clothes after handling. See product label for more detailed handling procedures.

STORAGE: Do not contaminate water, food or feed by storage or disposal. Store product in a cool, dry, locked place out of reach of children. Do not store below 50°F. Product crystallizes at lower temperatures. See label for specific instructions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: A well-ventilated area is recommended for handling Metam Sodium. Use of mechanical or local exhaust systems is recommended.

RESPIRATORY PROTECTION: A properly FIT-TESTED NIOSH/MSHA approved respirator fitted with organic vapor cartridges may be required when working with this product. Specific use regulations are listed on the label.

SKIN PROTECTION: Chemical resistant gloves, body covering clothing that has long sleeves and long pants, and chemical resistant shoes or boots, are required to prevent skin contamination. A chemical resistant apron may be required under certain circumstances. Wear clean clothes daily. Wash well with soap and water after handling this product. See the label for more specific instructions.

EYE PROTECTION: Safety glasses should be worn whenever working with chemicals. Face-sealing goggles (or full-face respirators) are required whenever ventilation is poor or a rotten egg odor is detected.

OTHER PROTECTION: An eyewash station and a safety shower should be located in the work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 112°C/234°F

Crystallization Point: 0°C to 20°C

Specific Gravity: 1.21 g/ml @ 20°C/4°C(68°F/39°F)

Density: 10.1 lb/gal

Vapor Pressure (mm/Hg): 24mm Hg @ 25°C

Percent Volatile by Vol: Not available

Solubility in Water: Miscible

Reactivity with Water: The active ingredient in VAPAM® Soil Fumigant (Metam Sodium) decomposes, when diluted with water, to methylisothiocyanate (MITC, a lachrymator and moderate poison) and/or to hydrogen sulfide (a highly poisonous gas). It can also decompose to carbon disulfide and monomethylamine (both highly flammable). Use the solution promptly after mixing. Do not allow the solution to stand. VAPAM® Soil Fumigant is stable.

Evaporation Rate: 1.0 as compared to water.

Appearance: Orange to light yellow-green liquid.

Odor: Essentially odorless to fairly strong odor of amine and sulfur.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (Conditions to avoid): This product is unstable as a dilute water solution, decomposing to methylisothiocyanate (MITC), and will also slowly degrade in the presence of air. As originally packaged, it is stable under normal storage conditions for up to 2 years.

INCOMPATIBILITY: This product is incompatible with additional water and strong aqueous acids. In addition, it is corrosive to copper, brass, and zinc, and may soften and/or discolor iron.

HAZARDOUS DECOMPOSITION PRODUCTS: When treated with water or heated to decomposition, this product will give off toxic fumes of methyl isothiocyanate (MITC), hydrogen sulfide, and nitrogen oxides.

HAZARDOUS POLYMERIZATION: This product will not polymerize.

11. TOXICOLOGICAL INFORMATION

INGESTION:	Oral LD ₅₀ (rat):	812 mg/kg
INHALATION:	Inhalation LC ₅₀ (rat):	2.28 mg/L
DERMAL:	Skin LD ₅₀ (rabbit):	>2020 mg/kg
EYE IRRITATION:	Eye irritation:	Irritant
SKIN IRRITATION:	Skin irritation:	Irritant
OTHER:	Skin sensitization:	Sensitizer

(guinea pig)
Laboratory studies have shown some developmental and carcinogenic effects in laboratory animals. Exposure monitoring studies conducted during agricultural applications of metam sodium have shown that human exposure is extremely low; therefore, any potential risk to humans from metam sodium exposure is considered minimal. **Care should be exercised and all label instructions should be followed, in the handling of VAPAM® Soil Fumigant.**

12. ECOLOGICAL INFORMATION

This product is toxic to fish. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

13. DISPOSAL CONSIDERATIONS

This product is a not a RCRA hazardous waste. Disposal must be at an approved waste facility for chemical wastes. The empty container must be triple rinsed prior to disposal. Consult the label and Federal, State, or local disposal authorities for the actual method(s) to be followed.

14. TRANSPORTATION INFORMATION

DOT Class	: 9
UN Number	: 3082
IMDG Class (sea)	: 6.1 (UN 3006), page 6219
Marine Pollutant	: Yes
IATA Class (air)	: 6.1 (UN 3006)
Packing Group	: III
Hazard label(s)	: Class 9
ADR Class (road)	: Not listed in ADR
Proper shipping name(s)	: DOT: Environmentally hazardous substances, liquid, n.o.s. (Metam Sodium) : IMDG & IATA: Dithiocarbamate pesticide, liquid, toxic (Metam Sodium)
Reportable Quantity	: No

PACKAGING

General description : Bulk; 5 gallon, 30 gallon, and 55 gallon poly drums

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

This product is registered under EPA/FIFRA Regulations. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

SARA TITLE III DATA

Section 311 & 312 Hazard Categories:

Immediate Health Hazard:	Yes
Delayed Health Hazard:	Yes
Fire Hazard:	No
Reactive Hazard:	No
Sudden Pressure Release Hazard:	No

Section 302 Extremely Hazardous Substances: None

Section 313 Toxic Chemicals: Metam Sodium (CAS 137-42-8) - 42%

CERCLA Reportable Quantity (RQ): None

STATE REGULATIONS:

CALIFORNIA (Proposition 65): None

16. OTHER INFORMATION

MSDS Status:

Date This Revision: 2/24/97

Date Previous Revision: 12/31/96

Person Responsible for Preparation: Gary A. Braden

Reasons for Revision: The registration number was updated in section 1 to reflect the transfer of the registration to AMVAC Chemical Corporation.

DISCLAIMER:

This information is provided for the limited guidance to the user. While AMVAC believes that the information is, as of the date hereof, reliable, it is the user's responsibility to determine the suitability of the information for its purposes. The user is advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional, or variable conditions or circumstances exist (like combinations with other materials), or because of applicable regulations. No express or implied warranty of merchantability or fitness for a particular purpose or otherwise is made hereunder with respect to the information or the product to which the information relates.

ABBREVIATIONS:

ACGIH	-	American Conference of Governmental Industrial Hygienists
CERCLA	-	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	-	Environmental Protection Agency
FIFRA	-	Federal Insecticide, Fungicide, and Rodenticide Act
IARC	-	International Agency for Research on Cancer
NTP	-	National Toxicology Program
SARA	-	Superfund Amendments and Reauthorization Act
TSCA	-	Toxic Substances Control Act
DOT	-	Department of Transportation
IMDG	-	International Maritime Dangerous Goods
IATA	-	International Air Transport Association

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